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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/710,131	06/21/2004	Russell H. Arndt	FIS920040029US1	4130
23550	7590	06/29/2005	EXAMINER	
HOFFMAN WARNICK & D'ALESSANDRO, LLC 3 E-COMM SQUARE ALBANY, NY 12207			LINDSAY JR, WALTER LEE	
			ART UNIT	PAPER NUMBER
			2812	

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/710,131	ARNDT ET AL.	
	Examiner	Art Unit	
	Walter L. Lindsay, Jr.	2812	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-11,13-15,17,19 and 20 is/are rejected.
- 7) ☒ Claim(s) 3,4,12 and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                                                                                |                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                           | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/21/2004</u> . | 6) <input type="checkbox"/> Other: ____                                                |

### **DETAILED ACTION**

This Office Action is in response to an Application filed on 6/21/2004.

Currently, claims 1-20 are pending.

### ***Specification***

1. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1, 2, 5-11, 13-15, 17 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foster (U.S. Patent No. 6,387,804 dated 5/14/2002).

Foster shows the method substantially as claimed in Figs. 4-7 and corresponding text as: providing a structure (12); exposing at the structure to an ozonated water bath (32); and salicidizing the structure whereby silicide (26) is formed over the structure (col. 5, lines 42-53) (claim 1). Foster teaches that the ozonated water bath includes no less than approximately 1 parts per million (ppm) and no greater than approximately 25 ppm of ozone ( $O_3$ ) (col. 4, lines 48-61) (claim 2). Foster teaches that the exposing step is conducted for no less than approximately 0.1 minutes and no greater than 10 minutes (col. 5, lines 33-40) (claim 5). Foster teaches that the exposing step generates an interfacial layer (col. 5, lines 1-15) (claim 7). Foster teaches that depositing a metal layer (col. 5, lines 42-53); depositing a cap layer on the metal layer; annealing to form a silicide (col. 5, lines 54-63); and removing the cap layer and excess metal layer (col. 5, lines 54-63) (claim 8). Foster shows the method substantially as claimed in Figs. 4-7 and corresponding text as: providing a FET (10); chemically pretreating the FET to prevent silicide formation (col. 5, lines 54-63) (claim 9). Foster teaches that the pretreating step includes exposing the FET to an ozonated water bath including no less than approximately 1 parts per million (ppm) and no greater than approximately 25 ppm of ozone ( $O_3$ ) (col. 4, lines 48-61) (claim 10). Foster teaches that the exposing step generates an interfacial layer (col. 5, lines 1-15) (claim 11). Foster shows the method substantially as claimed in Figs. 4-7 and corresponding text as: providing a structure (12); chemically pretreating the structure to prevent silicide (26) formation on the structure; and salicidizing the structure whereby silicide is formed only selectively (col. 5, lines 42-53) (claim 13). Foster teaches that the pretreating step includes exposing

Art Unit: 2812

the structure to an ozonated water bath (col. 4, lines 62-67) (claim 14). Foster teaches that the pretreating step includes exposing the FET to an ozonated water bath including no less than approximately 1 parts per million (ppm) and no greater than approximately 25 ppm of ozone ( $O_3$ ) (col. 4, lines 48-61) (claim 15). Foster teaches that the exposing step generates an interfacial layer (col. 5, lines 1-15) (claim 17). Foster teaches that depositing a metal layer (col. 5, lines 42-53); depositing a cap layer on the metal layer; annealing to form a silicide (col. 5, lines 54-63); and removing the cap layer and excess metal layer (col. 5, lines 54-63) (claim 20).

Foster lacks anticipation only in not explicitly teaching that of a first n-type structure and a second p-type structure, where now silicide is formed over the first structure (claims 1, 9 and 13). It would be obvious that Foster's process could be used to form CMOS devices, and since it follows the same path the same results would occur (col. 6, lines 9-14). It would also be obvious to implant the substrate in the first structure with phosphorous and arsenic, and the second structure is doped with boron and boron di-fluoride (col. 6, lines 9-14) (claims 6 and 19); which are well known in the art for forming source/drain regions.

#### ***Allowable Subject Matter***

5. Claims 3, 4, 12, 16 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 2812

6. The following is a statement of reasons for the indication of allowable subject matter: the prior art, either singly or in combination fails to anticipate or render obvious, the limitations of:

...wherein the ozonated water bath includes approximately 5 ppm of ozone ( $O_3$ ), as required by claims 3 and 16; and

...wherein the exposing step includes exposing to ozonated water bath at a rate of approximately 30 standard liters per minute (slpm) of water ( $H_2O$ ), as required by claims 4, 12 and 18.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter L. Lindsay, Jr. whose telephone number is (571) 272-1674. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael S. Lebentritt can be reached on (571) 272-1873. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2812

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Walter L. Lindsay, Jr.  
Examiner  
Art Unit 2812

WLL

June 16, 2005

